

Remarks

The above-referenced application has been reviewed in light of the Examiner's Office Action dated November 22, 2005. Claims 1, 5, 7, 12, 16, 18 and 22 have been amended. Accordingly, Claims 1-23 are currently pending in this application. The Examiner's reconsideration of the rejections is respectfully requested, particularly in view of the above amendments and the following remarks.

In accordance with the Office Action, Claims 1-4, 12-15 and 18-21 stand rejected under 35 U.S.C. §112, second paragraph, for antecedent basis informalities. Claims 1, 12 and 18 have been amended to correct the informalities.

In accordance with the Office Action, Claims 7 and 9 stand rejected under 35 U.S.C. §102(e) as being anticipated by United States Publication US 2002/0006226 to Shiota. Claim 7 has been amended.

Amended Claim 7 recites, *inter alia*, a "system for appearance-based object detection ... comprising ... a detection unit responsive to an input image, which input image has a different brightness and contrast than the trained images, for detecting objects corresponding to the trained images by adding a scaling and a shift to image intensity with a projection equation". Support for "adding a scaling and a shift to image intensity" may be found in the Application as originally filed (*see, e.g.*, Application at page 7, lines 25-26). No new matter has been added.

The Shiota publication is generally directed towards removing a shade from an image using principle component analysis, where the shade may be a shadow cast by or on a face, for example (see Shiota at Abstract). Thus, Shiota may address removal of a shade component cast by another component in the image.

Shiota does not show “adding a scaling and a shift to image intensity with a projection equation”, as set forth in amended Claim 7, to address differences in overall image intensity between training and input images. Therefore, Shiota neither teaches nor suggests all elements of amended Claim 7.

In accordance with the Office Action, Claims 1, 3-4, 10-12, 14-15, 18, 20-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Shiota in view of United States Patent No. 6,711,293 to Lowe. Claims 1, 7, 12 and 18 have been amended.

Amended Claims 1, 7, 12 and 18 each recite “adding a scaling and a shift to image intensity” in conjunction with a projection equation, as discussed above with respect to the first rejection of Claim 7. Also as discussed above, Shiota fails to teach or suggest “adding a scaling and a shift to image intensity”. In addition, Shiota is not directed towards “brightness and contrast normalization” of an entire image, but merely addresses removal of shadow components within an image. The Examiner’s interpretation of Shiota as addressing intensity normalization of an entire input image relative to a training set, when Shiota merely addresses shadow component removal within an image, is unreasonable

and should not be maintained.

The '293 to Lowe is generally directed towards scale-invariant object detection within an image. Lowe fails to recognize, much less address or cure the above-described deficiencies of Shiota, particularly with respect to "brightness and contrast normalization" as recited in amended Claims 1, 12 and 18, as well as "adding a scaling and a shift to image intensity" as recited in Claims 1, 7, 12 and 18.

In accordance with the Office Action, Claims 5-6, 16-17 and 22-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Shiota in view of Waters et al. *Super Resolution and Image Enhancement Using Novelty Concepts*. Claims 5, 16 and 22 have been amended.

Amended Claims 5, 16 and 22 each recite, *inter alia*, "wherein the pseudo-eigenimages are formed with a projection equation responsive to the coarse eigenimages by adding a scaling and a shift to image intensity".

Along the same lines as the above discussions with respect to Claims 1, 7, 12 and 18, Shiota fails to teach or suggest "pseudo-eigenimages are formed with a projection equation responsive to the coarse eigenimages by adding a scaling and a shift to image intensity" as set forth in amended Claims 5, 16 and 22.

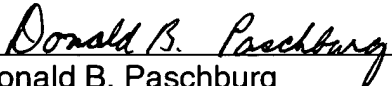
Waters et al. is generally directed towards multi-resolution imaging by detecting novel changes in a fixed but arbitrary sensor pointing direction, where the novel changes are merely changes that have not occurred before in that

pointing direction. Waters et al. fail to cure at least the above-described deficiencies of Shiota. Therefore, amended Claims 5, 16 and 22 are neither taught nor suggested by Shiota in view of Waters, nor by any of the other references of record in this case.

Conclusion:

Therefore, it is respectfully submitted that amended independent Claims 1, 5, 7, 12, 16, 18 and 22 are in condition for allowance for at least the reasons stated above. Since the dependent Claims 2-4, 6, 8-11, 13-15, 17, 19-21 and 23 each depend from one of the above claims and necessarily include each of the elements and limitations thereof, it is respectfully submitted that these claims are also in condition for allowance for at least the reasons stated, and for reciting additional patentable subject matter. All issues raised by the Examiner having been addressed, reconsideration of the rejections and an early and favorable allowance of this case are earnestly solicited.

Respectfully submitted,


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